KOCHERGIN, Sergey Mikhaylovich. Prinimal uchastiye LEONT'YEV, A.V., assistent; SPEKTOR, A.G., red.; ARKHANGEL'SKAYA, M.S., red. izd-va; KARASEV, A.I., tekhn.red.

[Texture of electrodeposited metals] Tekstura elektroosazhdennykh metallov. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1960. 127 p. (MIRA 13:11)
(Electroforming) (Metallography)

LEONT'YEV, A.V., inzh.; SMIRNOV, A.G., inzh.

Stirring an electrolyte by a lateral magnetic field. Mashinostroenie no.3:69-70 My-Je '63. (MIRA 16:7)

1. Kazanskiy khimikotekhnologicheskiy institut.
(Electrolytes) (Magnetic fields)

GOLIKOV, G.A.; LEONT'YEV, A.V.

Measurement of the Volta potential difference of electrodeposited nickel as depending on its structure. Elektrokhimiia 1 no.9:1113-1114 S '65. (MIRA 18:[illegible])

1. Kazanskiy khimiko-tekhnologicheskiy institut imeni S.M. Kirova.

LEONT'YEV, B.

Time works for us. Komm.Vooruzh.Sil 1 no.6:38-43 D '60.
(MIRA 14:8)
(Russia--Economic conditions) (World politics)

LEONT'YEV, B.

USSR/Chemical Technology. Chemical Products and Their Application -- Treatment of natural gases and petroleum. Motor fuels. Lubricants, I-13

Abst Journal: Referat Zhur - Khimiya, No 2, 1957, 5574

Author: Klimov, K., Leont'yev, B.

Institution: None

Title: Method of Studying the Mechanical Stability of Solid Lubricants

Original Publication: Novosti neft. tekhniki. Neftepererabotka, 1955, No 3, 27-34

Abstract: The newly developed method consists in first subjecting the lubricants to shearing deformation under rigorously defined physical conditions, and thereafter, following the breakdown of the structure, a study is made of the volumetric-mechanical properties of the lubricants. Breakdown of lubricant structure was effected in a special unit, the principal portion of which is a rotary apparatus. Yield strength (YS) to shearing was determined by means of a K-2 apparatus designed by Klimov. Comparative study of YS of lubricants subjected

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LEONT'YEV, B A

Name: LEONT'YEV, B. A.

Dissertation: A study of the isothermic and stage transformation of supercooled austenite

Degree: Cand Tech Sci

Defended at ~~Affiliation~~: Min Higher Education UkSSR, Khar'kov Polytechnic Inst imeni V. I. Lenin

Publication ~~Defense~~ Date, Place: 1956, Khar'kov

Source: Knizhnaya Letopis', No 45, 1956

LEONT'YEV, B.A.

11470* Study of the Structure of Steels 30 KhMA and Kh(ShKh-15) After the Bainitic Transformation. ~~Issledovanie struktury stalei 30 KhMA i Kh(ShKh-15)~~ posle promezhutochnogo prevrashcheniia. (Russian.) L. S. Palatnik and B. A. Leont'ev. *Fizika Metallov i Metallovedenie*, v. 2, no. 1, 1956, p. 43-53.

Met

Bainitic transformation has traits in common with the perlitic and martensitic transformations. Bainitic transformation consists of three processes: oriented precipitation of supersaturated ferrite; enriching surrounding austenite with C and formation of carbides; and tempering of supersaturated ferrite. Table, graph, micrographs, phase diagram. 28 ref.

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LEONT'YEV, B.A.

1

The mechanism of intermediate austenite transforma-
tion. B. A. Leont'ev and L. S. Palatnik. *Izvest. Akad.*
*Nauk S.S.S.R., Otdel. Tekh. Nauk* 1956, No. 10, 28-36.—
Electron-microscope structure studies of the austenite trans- /18
formation process (Russian trade marks 30-CrMA, 55C2,
and ShCr17) showed that the decomposition in the steel was al-
ways initiated in the α phase. At the lower-temp. interval of
the intermediate range indications are observed of the α-
phase supersatn. with C, which is not observed in the upper
temp. interval. The formation of the low C α phase during
the intermediate transformation can be explained by the
formation of nuclei in the modification impoverished in C,
and by a coherent nuclear growth during the initial C migra-
tion from the sepn. boundary. The growth of the ferrite sec-
tion is accomplished by a C enrichment of the surrounding
austenite, or the formation of carbides in it. The autoin-
hibition of the intermediate transformation becomes mani-
fest during the carbide formation process in austenite.

W. M. Sternberg

LEONT'YEV, B A.

126-2-15/35

AUTHORS: Leont'yev, B. A., Palatnik, L. S., and Spektor, Ya. I.

TITLE: Investigation of the kinetics of step-wise transformation of super-cooled austenite. (Issledovaniye kinetiki stupenchatogo prevrashcheniya pereokhlazhdennogo austenita).

PERIODICAL: Fizika Metallov i Metallovedeniye, 1957, Vol.5, No.2, pp. 304-317 (USSR)

ABSTRACT: At present no systematic data are available on the interaction of the products of austenite transformation obtained at various temperatures, on the influence of decomposition in one temperature range on the kinetics of transformation at another temperature. Detailed information is available only on the interaction of the products of intermediate and martensite transformation. Numerous authors (Refs.5-8) have pointed out that there is a lowering of the martensitic point after partial transformation of the austenite in the intermediate range. It was also pointed out (Refs.7-12) that there is an acceleration of the decomposition in the intermediate range after partial martensitic transformation. Information on other points is incomplete and sometimes contradictory. Hehemann, R.F., and Troiano, A.R. (Ref.13) detected a stabilization of the intermediate transformation

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Investigation of the kinetics of step-wise transformation of super-cooled austenite.

range after preliminary annealing at higher temperatures. Stregulin, A. I., and Kotsin, F.S. (Ref.14) found that the partial decomposition of the austenite in the pearlitic range in below-eutectoidal carbon steels, which is accompanied by ferrite separation, slows down the intermediate transformation and that such a decomposition in the eutectoidal steels does not affect the speed of intermediate decomposition. Jolivet, H., and Portevin, A. (Ref.15) also found that partial transformation at 600°C in CrNi steel containing 0.65% C does not influence the process of transformation at 250°C; they observed a marked slowing down of the pearlitic transformation under the influence of partial decomposition at 400°C. In contrast to this A. A. Popov (Ref.16) indicates that formation of ferrite-carbide mixture in structural alloy steels slows down appreciably intermediate transformation and the latter accelerates the formation of ferrite-carbide mixtures. The problem of interaction of transformation products obtained in various temperature ranges is of great theoretical and practical importance and study of this problem is likely to yield useful information on the

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Investigation of the kinetics of step-wise transformation of super-cooled austenite.

mechanism and the kinetics of decomposition and serve as a basis for developing more effective methods of heat treatment of steel. In this paper, thermomagnetic, metallographic and X-ray investigations are described relating to step-wise decomposition of austenite in the steels 55C2 and ШX15; main attention was paid to the intermediate transformation range. The chemical compositions of the two steels are as follows:

Steel 55C2: 0.53% C, 0.75% Mn, 1.71% Si, 0.019% S, 0.019% P, 0.23% Cr, 0.10% Ni;

" ШX15: 1.04% C, 0.29% Mn, 0.23% Si, 0.010% S, 0.020% P, 1.39% Cr, 0.16% Ni.

The graphs, Figs.1 and 2, p.305, give the diagrams of isothermal transformation for the two steels. The results of investigation of the kinetics of the step-wise transformation of austenite in the two steels are graphed in Figs.3-6. The values of the relative acceleration of the transformation, brought about by the preliminary decomposition in the other temperature range, defined by the formula:

$$100(v - v_0)/v_0,\ \%,$$

Card 3/7 where $v_0$ is the maximum speed of the isothermal trans-

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Investigation of the kinetics of step-wise transformation of super-cooled austenite.

formation at the given temperature, are entered in Table 2, p.307. The results of metallographic investigations are given and some of the obtained micro-photos are reproduced in the Figs.7-11, pp.310,311. Some of the results of the X-ray investigations are entered in Table 3, p.312. After giving some of the obtained results, the author discusses the following: the influence of pearlite on the kinetics of transformation in the intermediate range; the influence of partial transformation in the upper interval of the intermediate range on the kinetics of the intermediate transformation at low temperatures; the influence of partial transformation in the martensitic and the intermediate ranges on the kinetics of intermediate transformation at higher temperatures; the influence of partial transformation in the martensitic and the intermediate ranges on the kinetics of pearlitic transformation. It was established that preliminary transformation of austenite in the martensitic and the intermediate ranges brings about in both steels an acceleration of the intermediate transformation at higher temperatures which,in the given case,begins without

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Investigation of the kinetics of step-wise transformation of super-cooled austenite.

an incubation period. The effect of acceleration increases with decreasing temperature of the intermediate decomposition and also with increasing temperature at which final transformation takes place. Decomposition of the austenite in the upper range of the intermediate interval in the Steel 55C2 brings about an appreciable slowing down of the intermediate transformation at low temperatures. If there is a considerable quantity of preliminarily decomposed austenite, the remaining part of the austenite stabilizes on lowering the temperature. The influence of such treatment is less pronounced in the case of the steel Ш X15 and may lead to an acceleration or deceleration of the intermediate transformation at low temperatures, depending on the quantity of the preliminarily deformed decomposition products. A partial decomposition of the austenite in the intermediate and the martensitic ranges in both steels leads to a decrease in the speed of pearlitic transformation and this decrease will be the more pronounced the higher the percentage of the preliminary decomposition. The greatest slowing down is

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Investigation of the kinetics of step-wise transformation of super-cooled austenite.

observed in the case of preliminary decomposition in the lower region of the intermediate range. Increase of the temperature of pearlitic transformation leads to a decrease of the slowing down effect (Steel ШX15). Depending on the grade of the steel and the temperature of further transformation, the presence of pearlite may accelerate or decelerate the transformation in the intermediate range. The features of the kinetics of step-wise transformation cannot be satisfactorily explained by taking into consideration solely the changes in the concentration of the austenite and the germination effect of the preliminarily deformed transformation products. The basic cause of the influence of preliminary transformations in the intermediate and the martensitic ranges on the kinetics of transformation at other temperatures are the changes in the fine structure of the austenite accompanying the formation of a structure of the martensitic type. A convincing confirmation of this conclusion is the qualitative identity of the kinetics of step-wise transformation of austenite for the investigated steels, which differed in chemical

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Investigation of the kinetics of step-wise transformation of super-cooled austenite. 126-2-15/35

composition, structure and character of the carbon redistribution during the process of transformation. There are 11 figures, 3 tables and 24 references, 13 of which are Slavic.

SUBMITTED: June 11, 1956.

ASSOCIATION: Khar'kov Polytechnical Institute imeni V. I. Lenin. (Khar'kovskiy Politekhnicheskiy Institut imeni V.I.Lenina).

AVAILABLE: Library of Congress.

Card 7/7

LEONT'YEV, B.A.; SPEKTOR, Ya.I.

Use of the Akulov anisometer for studying stepwise decomposition of supercooled austenite in steel. Zav. lab. 23 no.3:325-326 '57. (MIRA 10:6)

1. Khar'kovskiy politekhnicheskiy institut im. V.I. Lenina. (Austenite)

SOV/163-58-1-38/53

AUTHOR: Leont'yev, B. A.

TITLE: On the Activation Energy of the Isothermal Transformation of Austenite (Ob energii aktivatsii izotermicheskogo prevrashcheniya austenita)

PERIODICAL: Nauchnyye doklady vysshey shkoly. Metallurgiya, 1958, Nr 1, pp 206-210 (USSR)

ABSTRACT: The activation energy of the isothermal transformation of austenite in the steel alloys ShKh15 and 55S2 was investigated. The diagram was constructed in semilogarithmic coordinates $\lg \tau_{0,5} = f\left(\frac{1}{T}\right)$, and by the tangent of the angle of inclination Q was determined. To determine $\tau_{0,5}$ at different temperatures the author thermomagneticly studied the kinetics and isothermal transformation of austenite in the steel alloys ShKh15 and 55S2. The activation energy Q of the perlite transformation in the alloys ShKh15 and 55S2 amounts to 36 kcal/g-atom. This is a new value of the activation energy of carbon diffusion in these steel alloys.
The results obtained show that the elementary process on which

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On the Activation Energy of the Isothermal Transformation of Austenite SOV/163-58-1-38/53

the perlite transformation depends in this alloy is only the diffusion of carbon.

In the crystallization of the ferrite-carbide mixture a value of Q = 17kcal/g-atom was found for the alloys ShKh15 and 55S2.

The values obtained for the activation energy point to the diverse mechanism of the transformation of austenite into perlite.

There are 2 figures, 2 tables, and 6 references, 6 of which are Soviet.

ASSOCIATION: Zhdanovskiy metallurgicheskiy institut (Zhdanov Metallurgical Institute)

SUBMITTED: October 1, 1957

Card 2/2

LEONT'YEV, B.A., kand.tekhn.nauk

Traces of overheating revealed by X rays in the structure of
steel. Izv.vys.ucheb.zav.; chern.met. 2 no.8:87-89
Ag '59. (MIRA 13:4)

1. Zhdanovskiy metallurgicheskiy institut. Rekomendovano
kafedroy metallovedeniya i termicheskoy obrabotki Zhdanov-
skogo metallurgicheskogo instituta.
(Steel--Metallography) (Metals, Effect of temperature on)

S/137/60/000/010/027/040
A006/A001

Translation from: Referativnyy zhurnal, Metallurgiya, 1960, No. 10, p. 229, # 24309

AUTHOR: Leont'yev, B.A.

TITLE: Kinetics of Isothermal Austenite Transformation in 55С2 (55S2) and ШХ15 (ShKh15) Steels

PERIODICAL: Sb. nauchn. tr. Zhdanovsk. metallurg. in-t, 1960, No. 5, pp. 289-294

TEXT: On the basis of thermomagnetic studies the following evaluation of the activation energy of transformation in ShKh15 and 55S2 steels is given: a) for pearlite transformation in ShKh15 steel Q = 36 kcal/g-atom; b) for the crystallization of the ferrite-carbide mixture in the intermediate range of ShKh15 steel Q = 17 kcal/g-atom; c) for the crystallization of the $\alpha$-phase in the intermediate range of 55S2 steel Q = 1 kcal/g-atom. A reduction of magnitude of the activation energy during the transition from the pearlite to the intermediate temperature range is explained by the appearance of the martensite

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S/137/60/000/010/027/040
A006/A001

Kinetics of Isothermal Austenite Transformation in 55С2 (55S2) and ШХ15 (ShKh15) Steels

mechanism of rearrangement of the crystal lattice from $\gamma$ into $\alpha$ in the intermediate range. It is established that for the steels investigated, parameter b of the Kolmogorov-Mirkin kinetic equation is not connected by a functional dependence with the temperature. There are 6 references.

I.B.

Translator's note: This is the full translation of the original Russian abstract.

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S/126/61/011/005/011/015
E073/E335

**AUTHORS:** Leont'yev, B.A. and Ivanisenko, T.I.

**TITLE:** On the Mechanism of Recrystallisation During Heating of Steel

**PERIODICAL:** Fizika metallov i metallovedeniye, 1961, Vol. 11, No. 5, pp. 746 - 751 + 1 plate

**TEXT:** The authors studied the process of recrystallisation during heating of the steels [illegible] (60KhG) and [illegible] (5KhNV) of the following compositions (%)

| | C | Mn | Si | S | P | Cr | Ni | W |
|---|---|---|---|---|---|---|---|---|
| 60KhG | 0.61 | 0.81 | 0.35 | 0.023 | 0.022 | 1.17 | 0.14 | - |
| 5KhNV | 0.51 | 0.63 | 0.20 | 0.022 | 0.011 | 0.66 | 1.55 | 0.60. |

For obtaining a clearly pronounced intragranular texture the specimens were preliminarily quenched from 1 200 - 1 250 °C and were then heated at a rate of 7 - 900 °C per hour to various temperatures and quenched again. The microstructure and appearance of the fracture were investigated and X-ray diffraction analysis was carried out. The austenite grain

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S/126/61/011/005/011/015
E073/E335

On the Mechanism of ....

was exposed by etching quenched specimens in a saturated aqueous solution of picric acid, adding 0.5% "Novost'" powder. X-ray investigation of the overheating texture was by back-reflection of polished coats using chromium radiation and focusing to the line (211) of the α-phase. To obtain clear interference rings the X-ray diffraction studies were made on specimens that had been additionally tempered at 650 °C for one hour. Qualitatively equal results were obtained for both steels. In the case of heating speeds between 7 and 60 °C/hour, large austenite grains of 1.5 - 3.0 $mm^2$ and clearly apparent polyhedric boundaries were observed in the steel 60KhG which prior to the investigations, was subjected to quenching and etching. Immediately after austenite formation, new centres appeared inside the grains, the grain boundaries became unequal with a character typical of the beginning of recrystallisation. The grains which form during recrystallisation grow at a greater speed and are large. On increasing the heating rate from

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E073/E335

On the Mechanism of ....

7 to 60 °C/h the average size of the austenite grain, after recrystallisation, decreases (from 90 000 to 4 000 $\mu^2$) and the temperature of the end of the recrystallisation decreases (from 870 to 820 °C). The X-ray diffraction patterns of the material after recrystallisation show continuous thin rings, which indicate a destruction of the over-heating texture. If the heating rate is increased to the range 120 - 900 °C/h, the nature of the recrystallisation changes. After passing the critical point, fine austenitic grains form at the boundaries and inside the initial crystallites, which are usually distributed in groups with a given orientation but grains are also encountered with orientations differeing from the general orientation of the other crystals. Increase in the heating rate leads to slight coarsening of the austenitic grain. In the case of heating at a rate of 180 °C/h in the range 800-850 °C, the speed of growth averaged 0.054 μ/min. The grain growth is accompanied by a decrease in the degree of perfection of the intra-granular texture which is conserved right up to 1 000 - 1 050 °C. ✓

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E073/E335

On the Mechanism of ....

On reaching these temperatures the growth of austenite grains increases rapidly and no longer is any regularity observed in their orientation and traces of the original boundaries are completely blotted out. Thus, recrystallisation of the investigated steel takes place at 1 000 - 1 050 °C. The microstructure investigations are in good agreement with investigations of the fractures and with X-ray diffraction results. The investigations have shown that in the case of accelerated heating the recrystallisation ✓ temperature increases somewhat with increasing heating speed and increasing initial grain size; under otherwise equal conditions, this temperature is 25 - 50 °C higher for the Steel 5KhNV than it is for the steel 60KhG. The obtained results show that there is a difference in the mechanism of recrystallisation depending on whether the heating is slow (7 - 60 °C/h) or fast (120 - 900 °C/h). At low heating speeds the austenite is formed with a strict interrelation of the orientations of the $\alpha$-lattice in the

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On the Mechanism of ....

S/126/61/011/005/011/015
E073/E335

γ-phase so that austenite grains are obtained for which the size and the orientation coincide with the original size and orientation. At higher heating rates groups of fine, regularly-orientated austenite grains are formed within the boundaries of the original large crystallites. It is concluded that at increased heating speeds (120 - 900 °C/h) recrystallisation of the two investigated steels is due to selective recrystallisation in the austenite. There are 4 figures and 9 Soviet references.

ASSOCIATION: Zhdanovskiy metallurgicheskiy institut (Zhdanov Metallurgical Institute)

SUBMITTED: August 24, 1960 (originally)
November 19, 1960 (after revision)

Card 5/5

S/148/62/000/008/006/009
E111/E435

AUTHORS: Leont'yev, B.A., Zubarev, V.F.

TITLE: New schedule for heat treatment of large alloy steel forgings

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy. Chernaya metallurgiya, no.8, 1962, 135-142

TEXT: The Tsentral'naya zavodskaya laboratoriya (Central Works Laboratory) of the Zhdanovskiy zavod tyazhelogo mashinostroyeniye (Zhdanov Heavy Machinery Works) jointly with the Kafedra metallovedeniya i termicheskoy obrabotki (Department of Science of Metals and Heat Treatment) of the Zhdanovskiy metallurgicheskiy institut (Zhdanov Metallurgical Institute) have developed a heat treatment schedule for large forgings of medium- and high-alloy steels which would prevent flake formation with the minimum duration of treatment. Tests were carried out on forgings 800 mm diameter, 1000 mm long of types 50ХН(50KhN), 60ХН (60KhN), 60ХГ (60KhG) and 15ХНГ(15KhNV) steels using various heat treatments. Results: Before austenization, isothermal holding at 720 to 750°C is applied, whereby the holding time at

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LEONT'YEV, B.A.; LOPATINA, O.A.

Mechanism of structural transformations during the heating of steel. Fiz. met. i metalloved. 13 no.6:920-923 Je '62. (MIRA 15:7)

1. Zhdanovskiy metallurgicheskiy institut.
(Steel—Metallography) (Phase rule and equilibrium)

L 25431-65 EWT(m)/EWA(d)/T/EWP(t)/EWP(b)/EWA(c) MJW/JD

ACCESSION NR: AR5005686 S/0276/64/000/009/B362/B063

SOURCE: Ref. zh. Tekhnologiya mashinostroyeniya. Svodnyy tom, Abs. 9B366

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B

AUTHOR: Khlestov, V. M.; Zubarev, V. F.; Leont'yev, B. A.

TITLE: The effect of zirconium on stability of austenite and hardenability of steels 35KhG, 35KhGR and 35KhGV

CITED SOURCE: Sb. Legirovaniye staley. Kiyev, Gostekhizdat USSR, 1963, 80-86

TOPIC TAGS: boron steel, alloy steel, austenite stability, steel hardenability, zirconium alloying, pearlite phase, intermediate phase / 35KhG steel, 35KhGR steel, 35KhGV steel

TRANSLATION: Experimental steels were prepared in an electric arc furnace (capacity 30 kg). Zr in quantities up to 0.58% was fed into the furnace in the form of 15% FeZr briquets. The range of element content varied insignificantly within each melt batch of the tested steels. Hardenability was determined on samples 100 mm long and 25 mm in diameter, using the face hardening method and heating to 860C. Isothermal breakdown of austenite was analyzed on an N. S. Akulov anisometer, using

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samples 25 mm long and 3 mm in diameter. Austenizing was carried out at 860C with exposures of 5 min., Sn serving as the isothermic agent, Zr exerted a significant effect on the stability of austenite in 35KhG steel, especially in the pearlite phase. The incubation period of pearlite conversion was prolonged 150 and 300% by 0.05 and 0.25% Zr, respectively The stability of austenite decreased with a further increase in Zr. In the intermediate phase, the stability of austenite increased monotonously as Zr content was increased to 0.58%. The effect of Zr appeared more sharply in steels containing boron. Zr produced a supplemental improvement in the stability of austenite in 35KhGr steel, but the improvement was somewhat less for 35KhGV steel. The hardenability of steels containing Zr exhibited complete conformity to the admixture's effects on the kinetics of isothermal conversion of austenite. The increase in stability of austenite in the pearlite phase is attributed to partial dissolution of Zr in the austenite. The varying intensity of the effects of Zr as its content increased from 0.05 to 0.58% is attributed to varying distribution of the added Zr between the austenite and the carbide phase. The improvement in stability of the austenite and hardenability of 35KhGR boron steel at a low Zr content is attributed to the admixture's

L 36431-65
ACCESSION NR: AR5005688

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effect as a deoxidizer and denitryifying agent which tends to increase the active content of boron. An increase in Zr to 0.25% reduced hardenability in boron steels in comparison to steel containing 0.06% Zr. The optimal content of Zr was defined as 0.06 to 0.08% for 35KhG steel. Alloying of 35KhGV steel with 0.09% Zr did not produce a significant improvement in the stability of austenite in the intermediate phase. Bibl. with 6 titles; 5 illustrations and 4 tables.
Yu. Avraamov.

SUB CODE: MM ENCL: 00

Card 3/3

KHLESTOV, V.M.; ZUBAREV, V.F.; LEONT'YEV, B.A.

Effect of zirconium on the stability of austenite and the hardenability of 35KhG, 35KhGR and 35KhGB steels. Izv. vys. ucheb. zav.; chern. met. 6 no.10:113-119 '63. (MIRA 16:12)

1. Zhdanovskiy metallurgicheskiy institut.

LEONT'YEV, B.A.

Theory of transformations of undercooled austenite. Fiz. met. i metalloved. 16 no.4:516-520 O '63. (MIRA 16:12)

1. Zhdanovskiy metallurgicheskiy institut.

L 39731-65 EWT(m)/EWA(d)/T/EWP(t)/EWP(z)/EWP(b)/EWA(c) HJW/JD

ACCESSION NR: AR5004782 S/0137/64/000/010/I006/I006

35
33
B

SOURCE: Ref. zh. Metallurgiya, Abs. 10I41

AUTHOR: Leont'yev, B. A.

TITLE: Transformation of supercooled austenite 14

CITED SOURCE: Sb. nauchn. tr. Zhdanovsk. metallurg. in-t, vyp. 12, 1964, 175-184

TOPIC TAGS: transformation, austenite, 6 ferrite, bainite, barbide, supercooling, steel microstructure, crystal formation, grain structure, phase transition, diffusion, 14 shear

TRANSLATION: Polished sections of annealed carbon steels 16 containing 0.33 and 0.50% carbon were austenitized in a vacuum at 1100 and 1000° with a holding time of 30 min, then rapidly cooled to the transition temperature in the range 750-650°, where they were held for 1 hr, after which they were cooled to room temperature. The growth by diffusion of needle-shaped crystals and the formation of Widmannstaetten branches from the ferrite and carbide lattices on the

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ACCESSION NR: AR5004782

faces of the grains is evidence that shear and diffusion types can have a catalytic effect one on the other. The nature of the surface microrelief and microstructural tests point to the absence of a qualitative difference between needle-shaped ferrite of the Widmannstaetten and bainite types whose crystallization process takes place by a shear mechanism. The temperature interval between the equilibrium and quasi-equilibrium lines of the diagram is determined by the amount of energy expended in the formation of the needle-shaped crystals. The ratio of the velocities of the diffusion and shear transitions depends basically on the chemical composition of the steel and the austenite grain size and can be described by the structural diagrams for isothermal transition. Similar diagrams for steels 35 and U12, constructed from literature data, are given as examples. 16 literature titles. I. Tulupova.

SUB CODE: MM ENCL: 00

Card 2/2

LEONT'YEV, B.G., inzhener

Redesigning a breathing redrier. Der.prom.4 no.5:15-17 My'55.
(MLRA 8:10)

(Veneers and veneering) (Driers)

LEONT'YEV, B. I

USSR/Chemical Technology. Chemical Products and Their Application -- Treatment of natural gases and petroleum. Motor fuels. Lubricants, I-13

Abst Journal: Referat Zhur - Khimiya, No 2, 1957, 5573

Author: Klimov, K. I., Leont'yev, B. I.

Institution: None

Title: Mechanical Stability of Lubricant Grease at Different Temperature

Original Publication: Novosti neft. tekhn. Neftepererabotka, 1955, No 6, 26-30

Abstract: By using an apparatus developed by the authors an investigation was made of changes in yield strength at 20° ($\tau^{20}_{nr}$) of some lubricant greases on their breakdown in the gap between coaxial cylinders (gradient of displacement velocity 1,570 sec$^{-1}$) and subsequent relaxation. Rate of pumping of the lubricant through the rotational apparatus was maintained at 0.4 cm$^3$/second. Breakdown of the lubricants was effected at different temperatures: from -10 to 95°. It was found that change in $\tau^{20}_{nr}$, i.e., mechanical stability (MS) of

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Leont'yev, B. I.

Distr: 4E4j

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7

Determination of stability of colloidal systems. E. I. [illegible] and B. I. Leont'ev. U.S.S.R. 105,928, Aug. 25, 1957. The resistance of a colloidal system to mech. disintegration is detd. in a rotary-type viscometer or plastometer. The suspension to be examined is fed into the opening between the rotor and stator where the colloidal structure is being rubbed at a const. rate and temp. M. Hosch

1/1

Pm

LEONT'YEV, B I

KLIMOV, K.I.; LEONT'YEV, B.I.

New method of studying the mechanical and thixotropic properties of greases under uniaxial tensile stress. Khim. i tekh. topl. i masel 3 no.4:66-72 Ap '58. (MIRA 11:4)
(Lubrication and lubricants--Testing)

SOV/92-58-7-22/37

**AUTHORS:** Leont'yev, B.I. and Fomina, A.M.

**TITLE:** The Speedy Dehydration of Dark Petroleum Products (Uskorennoye obezvozhivaniye temnykh nefteproduktov)

**PERIODICAL:** Neftyanik, 1958, Nr 7, p 25 (USSR)

**ABSTRACT:** The authors state that the analysis of a petroleum product sample containing a considerable amount of water is complicated, and is particularly difficult when heavy viscous oils or mazut have to be analysed. The dehydration of such samples by presently existing methods takes a long time. Therefore the authors have proposed a new method of dehydrating the samples of dark petroleum products, which is based on the absorption of moisture by filter paper, capillary ascension of moisture and evaporation. They describe the proposed method and state that the vessel with the product and filter paper has to be heated to 60° - 120°C until moisture bubbles disappear from the surface of the petroleum product. In order to speed up evaporation a stream of air may be directed on to the upper part of the filter paper which is projected over the edge of the vessel. The new method ensures the dehydration of 150 grams of mazut containing 2 - 3 percent of water in 30 - 40 minutes.

**Card 1/1**

1. Petroleum--Dehydration 2. Oils--Analysis 3. Petroleum--Testing equipment 4. Petroleum--Test results

LEONT'YEV, B. I., CAND Tech Sci -- (diss) "Mechanical Stability of Consistent Greases," Moscow, 1960, 17 pp, 160 copies (Moscow Institute of Petrochemical and Gas Industry im I. M. Gubkin) (KL, 48/60, 114)

15.6500

77932
SOV/65-60-3-5/19

AUTHORS: Klimov, K. I., Leont'yev, B. I.

TITLE: Thixotropic Properties of Greases

PERIODICAL: Khimiya i tekhnologiya topliv i masel, 1960, Nr 3, pp 17-21 (USSR)

ABSTRACT: The authors studied the apparent viscosity of solidol made of animal fat (GOST 1033-51), solidol synthetic (GOST 4366-50), konstalin from animal fat (GOST 1957-52), and lubricant tsiatim-201 (GOST 6267-52). The results of the experiments are shown in Fig. 2. Solid lines in Fig. 2 show changes of apparent viscosity as a result of mechanical treatment plotted against shear rate. Dotted lines show relation of apparent viscosity changes of greases deformed at certain shear rate in the process of thixotropic regaining of their structure. Time needed for grease to regain its structure is shown in the upper part of Fig. 2. Some greases needed as much as 720 hr to regain structure. There are 3

Card 1/3

Thixotropic Properties of Greases

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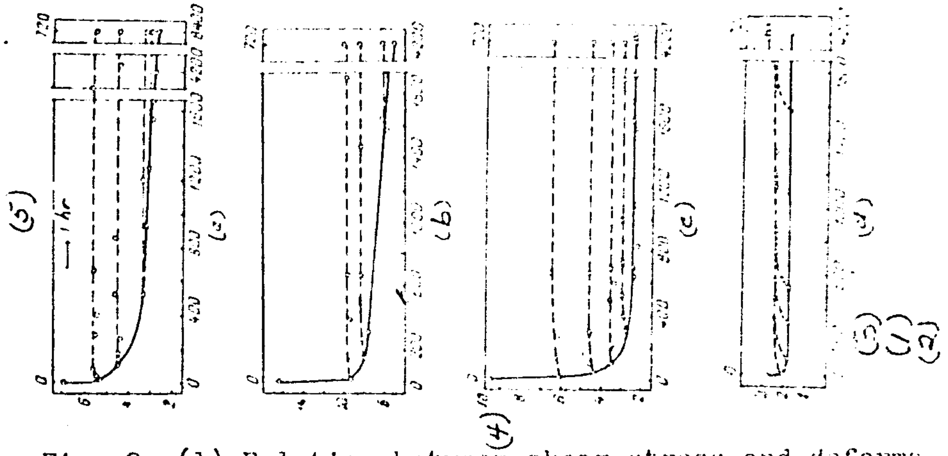

Fig. 2. (1) Relation between shear stress and deformation intensity of greases (2) a, solidol from animal fat; b, konstalin from animal fat; c, lubricant tsiatim-201; d, synthetic solidol (3) shear rate, sec$^{-1}$ (4) shear stress, g/cm$^2$ (5) regaining time, hours.

Card 2/3

Thixotropic Properties of Greases

77932
SOV/65-3-5/19

figures; and 15 references, 7 Soviet, 8 U.S. The 5 most recent U.S. references are: Jackson, E. I., Boser, E. R., NLGI, Spok., 19, Nr 11, 8, 1956; Bailey, C. A., NLGI, Spok., 19, Nr 8, 12, 1955; Smith, J. D., NLGI, Spok., 19, Nr 8, 8, 1955; McGrogan, I. F., NLGI, Spok., 19, Nr 7, 22, 1955; Renshow, T. A., Ind. Eng. Chem., 47, Ne 4, 834, 1955.

Card 3/3

VIPPER, A.B.; LEONT'YEV, B.I.; SAZONOV, A.Ye.

Dispersity of impurities in oil in the course of centrifugal purification. Khim.i tekh.topl.i masel 6 no.3:60-62 Mr '61.
(MIRA 14:3)

(Lubrication and lubricants)

34975
S/080/62/035/002/015/022
D258/D302

11.0132

AUTHORS: Chertkov, Ya. B., ~~Leont'yev, B. I.~~, Shchagin, V. M. and Sazonov, A. Ye.

TITLE: Electron microscope investigation of changes occurring during the heating of S-containing compounds dissolved in middle fractions of Volga-region petroleum fuels

PERIODICAL: Zhurnal prikladnoy khimii, v. 35, no. 2, 1962, 394-397

TEXT: The authors studied the formation of a solid phase as the result of heating middle cuts of petroleum fuels rich in organic S compounds. This was done to investigate the thermal stability of such fuels. Samples of a standard fuel TC-1 (TS-1) were desulphurized and then treated with the individual mercaptans, sulphides, disulphides, thiophanes and thiophenes, normally found in Volga-region fuels, and also with sulphur-rich concentrates isolated from the latter. The compounds were added in quantities equivalent to up to 0.01% of mercaptanic S and up to 0.25% S for the rest. The solutions were examined under an electron microscope for the pre-

Card 1/2

VIPPER, A.B.; LEONT'YEV, B.I.

Investigation of used oils with cleaning additives by means of an electron microscope. Khim.i tekh.topl.i masel 7 no.4:53-56 Ap '62. (MIRA 15:4)
(Lubrication and lubricants)

SABLINA, Z.A.; LEONT'YEV, B.I.; SAZONOV, A.Ye.

Using the electron microscope for studying the properties of hydrocarbon fuels. Azerb. neft. khoz. 41 no.9:35-37 S '62.
(MIRA 16:6)

(Petroleum as fuel—Analysis)
(Electron microscopy)

KLIMOV, K.I. (Moskva); LEONT'YEV, B.I. (Moskva); SINITSYN, V.V. (Moskva)

Effect of strain on the bulk mechanical properties of lubricating greases. Koll.zhur. 26 no.2:200-206 Mr-Ap '64. (MIRA 17:4)

ACCESSION NR: AP4023499 S/0069/64/026/002/0200/0206

AUTHORS: Klimov, K.I.; Leont'yev, B.I.; Sinitsy*n, V.V.

TITLE: The effect of the intensity of strain on the bulk-mechanical properties of lubricating greases

SOURCE: Kolloidny*y zhurnal, v. 26, no. 2, 1964, 200-206

TOPIC TAGS: lubricating grease, lubricating grease property, sodium grease, calcium grease, lithium grease, grease breakdown, thixotropic breakdown, rotatory viscosimeter, capillary viscosimeter, strength temperature characteristic

ABSTRACT: The thixotropic breakdown and recovery of lubricating greases was investigated by breaking them down in the annular gap of a rotatory instrument. The breakdown time was controlled by changing the axial rate of flow of the grease between the stationary and the rotating cylinders of the instrument. Viscometric measurements in capillary (AKV-2) and rotatory (PVR-1) instruments were compared

Card 1/4

ACCESSION NR: AP4023499

(Figs. 1 and 2 of the Enclosure); in the rotatory viscosimeter the breakdown of the greases must be considered when comparing results. Viscosity, yield value, and tensile strength of the greases was determined before and after breakdown of sodium and calcium greases, and lubricant TsIATIM-201 (lithium). Increase in the breakdown intensity lowers the viscosity and yield value of the greases down to a given level. Some greases made of soaps of synthetic acids showed an increase in the yield values with increasing strain. Intensity of mechanical breakdown is only slightly indicative of the strength-temperature and the viscosity-rate properties of the lubricating greases. Orig. art. has: 6 figures and 4 tables.

ASSOCIATION: none

SUBMITTED: 10Nov62 DATE ACQ: 15Apr64 ENCL: 02

SUB CODE: FP NO REF SOV: 006 OTHER: 000

ATD PRESS: 3044

Card 2/4

ACCESSION NR: AP4023499 ENCLOSURE: 01

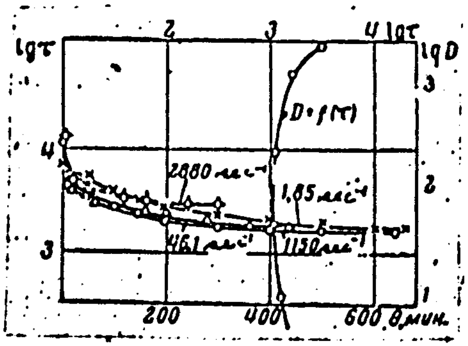

Fig. 1

Viscosity characteristics of TsIATIM-201 grease at 20C, obtained on rotary viscosimeter

ACCESSION NR: AP4023490

ENCLOSURE: 02

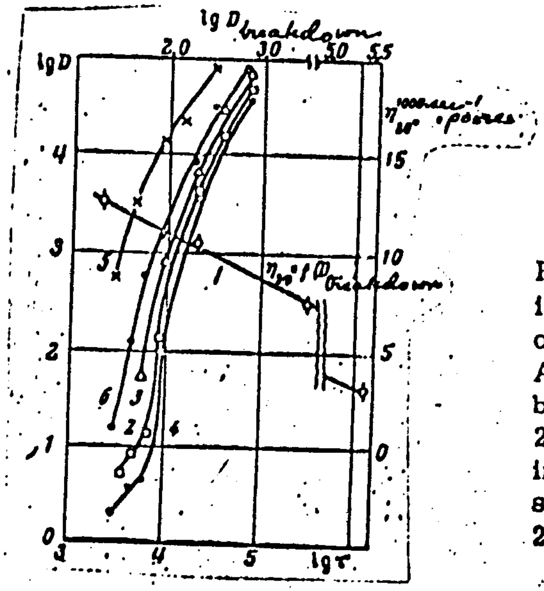

Fig. 2

Relationship of viscosity characteristics of TsIATIM-201 grease, obtained on capillary viscosimeter AKV-2 at 20C, to the intensity of its breakdown: 4--prior to breakdown; 2, 3, 6--after breakdown at D, equaling 21 $sec^{-1}$., 210 $sec^{-1}$ and 3150 $sec^{-1}$; 5--homogenizing at D = 252,000 $sec^{-1}$; 1--$\eta_{эф}$

Card 4/4

POLESHKO, I.V.; LEONT'YEV, B.G.

Our experience operating on fuel oil. Sakh. prom. 33 no.5:45-46
My '59. (MIRA 12:7)

1.Gul'kevicheskiy sakharnyy zavod.
(Gul'kevichi--Sugar industry--Equipment and supplies)
(Petroleum as fuel)

SHLYAPIN, V.B., kand.tekhn.nauk, VINOGRADOV, Yu.G., inzh,
LEONT'YEV, D.V., inzh., IONSKIY, Ye.D., kand.tekhn.nauk.

Built-up welding under flux by means of a weaving arc.
Svar. proizv. no.2:24-26 F '60. (MIRA 13:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut zheleznodorozhnogo transporta Ministerstva putey soobshcheniya.
(Electric welding)
(Machinery--Maintenance and repair)

S/193/60/000/012/006/018
A004/A001

AUTHORS: Shlyapin, V. B., Vinogradov, Yu. G., Leont'yev, D. V., Rovkakh, S. Ye., Kolesnichenko, A. N., Yermolayeva, M. I.

TITLE: Vibration-Arc Build-Up of Parts With the Aid of the Automatic АНКЭФ-1 (ANKEF-1) Head

PERIODICAL: Byulleten' tekhniko-ekonomicheskoy informatsii, 1960, No. 12, pp. 20-21

TEXT: The Tsentral'nyy nauchno-issledovatel'skiy institut putey soobshcheniya (Central Scientific Research Institute of Transport) (TsNII MPS) has developed a new method of submerged vibration arc building-up of shaft journals of the rolling stock. A thin metal layer of 0.3 - 3 mm is built up without cracks, pores and slag impurities. The building-up equipment, the special automatic ANKEF-1 head, was manufactured in cooperation with the design and planning office of the Glavstroymekhanizatsiya Ministerstva transportnogo stroitel'stva (Glavstroymekhanizatsiya of the Ministery of Transport Engineering). The part being built up is clamped in the centers of a lathe and rotates with a speed of 1-5 rpm while the metal is welded on with the ANKEF-1 head shown in the illustration. The head is actuated by the AOЛ-11-2 (AOL-11-2) 180 w electromotor 1 which also feeds the

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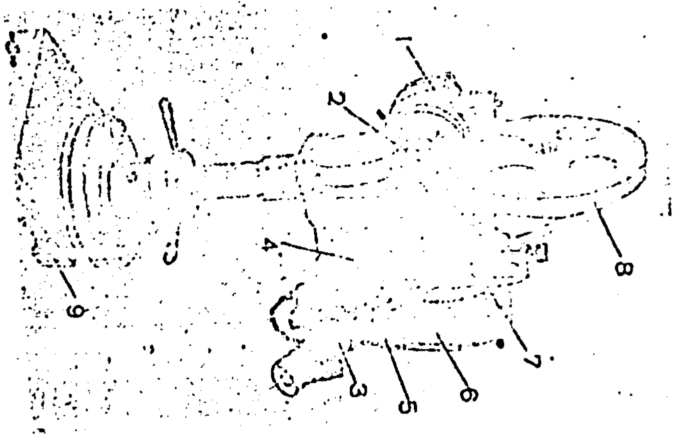
S/193/60/000/012/006/018
A004/A001

Vibration-Arc Build-Up of Parts With the Aid of the Automatic АНКЭФ-1 (ANKEF-1) Head



electrode wire to the part and produces the vibrations with the aid of worm reducer 2. Nozzle 3 carries out oscillations parallel to ellipsoid axis. The vibrator consists of an axle and two eccentrically located bushings 4. The axis of the outer bushing is displaced relative to the inner one by 1.5 mm, so that the total eccentricity can be varied from 0 to 3 mm. The nozzle is connected to rocker 5. At the end of the axis of the eccentric mechanism a driven skew bevel wheel is mounted which is geared to the toothed wheel of the worm shaft of the reducer. The set

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S/193/60/000/012/006/018
A004/A001

Vibration-Arc Build-up of Parts With the Aid of the Automatic АНКЭФ-1 (ANKEF-1) Head

of toothed wheels makes it possible to vary the number of nozzle oscillations in the range of 20 - 57 cps. Electrode wire feed mechanism 6 is mounted on a plate fastened to the reducer housing. The driving roll for the wire feed is made of two disks and a set of rubber rings tightened by nut 7. The electrode wire is fed to the part being built up from magazine 8. The feed speed can be varied between 57 and 236 m/hour. The ANKEF-1 head has a special prop 9 by which it is fastened to the cross slide of lathe. By the screw, connecting the head with the prop, the former can be lifted by 200 mm from its lower position. A cylindrical hinge over the screw makes it possible to tilt the head around its horizontal axis through 150°, while it can be swiveled around its vertical axis through 360°. The overall dimensions of the head (height x length x width) are 600 x 560 x 200 mm, it weighs 30 kg. For building-up operations with the ANKEF-1 heads the standard flux grades АН-348 (AN-348) or ОСЦ-45 (OSTs-45) are used. The repair costs of parts reconditioned by building-up amount to 10 - 30% of the manufacturing costs. There is 1 figure.

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Card 3/3

SHLYAPIN, V.B., kand.tekhn.nauk; LEONT'YEV, D.V., inzh.

Cold pressure welding of copper contact wires. Vest. TSNII MPS 20 no.6:44-46 '61. (MIRA 14:10)

(Electric railroads--Wires and wiring)
(Welding)

LEONT'YEV, D., starshiy nauchnyy sotrudnik

Cold welding of a copper contact wire. Zhil.-kom. khoz. 12 no.1:23-24 Ja '62. (MIRA 15:6)

1. Otdeleniye svarki Vsesoyuznogo nauchno-issledovatel'skogo instituta zheleznodorozhnogo transporta.
(Electric railroads—Wires and wiring)

LEONT'YEV, D.V., inzh.; SHLYAPIN, V.B., kand.tekhn.nauk

Cold welding of alloyed copper conductors. Svar.proizv. no.4:28-29 Ap '64. (MIRA 18:4)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut zheleznodorozhnogo transporta Ministerstva putey soobshcheniya.

LEONT'YEV, D.V.; SHLYAPIN, V.B.

Cold welding a copper contact wire. Avtom. svar. 17 no.5:68-72 My '64. (MIRA 17:1

1. TSentral'nyy nauchno-issledovatel'skiy institut Ministerstva putey soobshcheniya.

SHLYAPIN, Vladimir Borisovich; LEONT'YEV, Dmitriy Vasil'yevich

[Cold welding of contact wires] Kholodnaia svarka kontaktnykh provodov. Moskva, Transport, 1965. 28 p.
(MIRA 18:10)

LEONT'YEV, K.

The main factor is the organizational work of the committees.
Voen.znan. 36 no.12:9-10 D'60. (MIRA 13:11)
(Sports)

SOBOLEVA, N.I., zaveduyushchiy (Moscow); RYABINKINA, A.I., zaveduyushchiy (Moscow); KALUGINA, M.N., glavnyy vrach; LEONT'YEV, F.A., glavnyy vrach.

Etiology and pathogenesis of Taratinov's disease; eosinophilic granuloma of the bone or benign medullary reticuloma with eosinophilia. Arkh.pat. 15 no.4: 37-46 Jl-Ag '53. (MLRA 6:11)

1. Patologoanatomicheskoye otdeleniye Detskoy klinicheskoy bol'nitsy im.prof. V.P.Filatova (for Soboleva). 2. Detskaya klinicheskaya bol'nitsa im. prof. V.P.Filatova (for Kalugina). 3. Patologoanatomicheskoye otdeleniye TSentral'noy klinicheskoy bol'nitsy im. N.A.Semashko Ministerstva putey soobshcheniya (for Ryabinkina). 4. TSentral'naya klinicheskaya bol'nitsa im. N.A.Semashko Ministerstva putey soobshcheniya (for Leont'yev).

(Bones--Diseases) (Tumors)

LEONT'YEV, F. L.

"Introduction of Medicinal and Diagnostic Substances into Red Bone Marrow of Lower Part ofl the Sternum," Khirurgiya, No.2, 1948

1st Surg. Clinic, Central Clinical Hosp. im. Semashko

LEONT'YEV, F. L.

Intrathoracic method of blood transfusions and drug infusion. Moskva, Gos. izd-vo med. lit-ry, 1950. 86 p. (Biblioteka prakticheskogo vracha (51-23583

BYKOVA, M.P.; LEONT'YEV, F.L., nachal'nik; MALINOVSKIY, M.S., professor, deystvitel'nyy chlen Akademii meditsinskikh nauk SSSR, zaveduyushchiy kafedroy.

So-called physiological weight loss in newborn put on breast feeding 20-30 minutes after birth. Vop.pediat. 21 no.4:54-56 Jl-Ag '53. (MLRA 6:10)

1. Akushersko-ginekologicheskoye otdeleniye TSentral'noy klinicheskoy bol'nitsy im. N.A.Semashko (for Leont'yev). 2. Kafedra TsIU (for Malinovskiy).
(Infants—Nutrition) (Body weight)

LEONT'YEV, F.L.

Intrasternal transfusion of blood and medicinal substances and the causes of possible failures. Trudy TSIU 2:343-347 '61. (MIRA 15:8)

(BLOOD—TRANSFUSION) (STERNUM—PUNCTURE) (INJECTIONS)

LEONT'YEV, F. M.

USSR/Medicine — DDT Toxicity
Medicine — Horses

Sep 48

"Toxicity of DDT Preparation on Horses," I. A. Yegorov, Cand Vet Sci, F. M. Leont'yev, Sci Co-Worker, T. P. Mashirov, Sanitary Prophylactic Sec, Kazan Sci Res Vet Inst, 1 p

"Veterinariya" No 9

Describes experiments to ascertain the toxiciyt of DDT for horses.

PA 22/49T70

LEONT'YEV, F.M.

EGOROV, I. A., Cand. Vet. Sci.; LEONT'YEV, F. M., Jr. Sci. Coworker
Kazakh Sci. Res. Vet. Inst.

"Acaricidic properties of DDT, hexachloran and soap "k" against ticks-transferers of hemosporidioses of horses"

SO: Veterinariia, 25 (3), 1948, p. 35

LEONT'YEV, F. S.

"Botanically Unknown Arctic Spaces of the Omolon-Chukotskiy Area in the Far East," Sub. 26 Feb 47, Moscow Order of Lenin State U imeni M. V. Lomonosov..

Dissertations presented for degrees in science and engineering in Moscow in 1947.

SO: Sum.No.457, 18 Apr 55

60/49T10

USSR/Biology Jul/Aug 48
Plants
Expeditions

"The Northern Limit of Occurrence of Deciduous Species of Wood in the Far Eastern Omolonsko-Chukotsk," F. S. Leont'ev, 3 pp

"Byul Mosk Obshch Ispytat Priorod, Otdel Biol" Vol LIII, No 4

Describes plant growth in extreme northern limits of the forest belt, including Larix dahurica Turcz which is well known from several previous expedi-ion tions. Gives geographical zones for Chosenia

[redacted] 60/49T10

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USSR/Biology (Contd) Jul/Aug 48

macrolepis (Turcz.) Kom. and others (includes map). Considers varieties described to be either direct sur survivors of Tertiary flora or close to its representative form; in any case they are completely foreign flora strictly of the arctic type.

[redacted] 60/49T10

LEONT'YEV, F. S.

[illegible]

35377 K Proiskhozhdeniyu Kazatskoy Du ra.y. Trudy Glav. Botan. Sada, T. I, 1949, S. 87-96.--Bibliogr: 12 Nazv.

SO: Letopis' Zhurnal'nykh Statey Vol. 34, Moskva, 1949

38043. LEONT'YEV, F. S. K.

Sozdaniyu ekspozitsii flory Dal'nego Bostoka /Glav. Botan. sad/
Byulleten' Glav. botan. sada, vyp. 4, 1949, s. 19-23

LEONT'YEV, F. S.

Sostavlenie gerbariia i podgotovka rastenii k pokazu v kraevedcheskom muzee /Preparing a herbarium and exhibiting plants in regional studies museums/. Moskva, Goskul'tprosvetizdat, 1952. 110 p. (Komitet po delam kul't.-prosvet. uchrezhdenii pri Sovete Ministrov RSFSR. Nauch.-issled. in-t kraevedcheskoi i muzeinoi raboty)

SO: Monthly List of Russian Accessions, Vol. 7, No. 3, June 1954.

**LEONT'YEV, F.S.**

[Study and display of useful plants in the regional studies museum]
Izuchenie i pokaz vazhneishikh prirodnykh rastenii v kraevedcheskom
muzee. Moskva, Gos. izd-vo kul'turno-prosvetitel'noi lit-ry, 1953.
131 p. (MLRA 7:1)
(Plants--Collection and preservation) (Botany, Economic)

LEONT'YEV, F.S., inzh.

Current efficiency of mine electric locomotive motors. Izv.vys.ucheb.zav.; gor.zhur. no.6:60-65 '59. (MIRA 13:4)

1. Leningradskiy ordena Lenina i ordena Trudovogo Krasnogo Znameni gornyy institut imeni G.V.Plekhanova. Rekomendovana kafedroy gornoy elektrotekhniki.
(Electricity in mining) (Mine railroads)

LEONT'YEV, Fedor Stepanovich; VORONTSOVA, A.N. , redaktor; NOGINA, N.I., tekhnicheskiy redaktor

[In the polar expanse; a naturalist's notebook] V prostorakh Zapoliar'ia; zapiski naturalista. Moskva, Gos. izd-vo geogr. lit-ry, 1956. 181 p. (MLRA 9:9)
(Arctic regions)

LEONT'YEV, F. S., Cand Tech Sci -- (diss) "Conditions of performance of traction engines in electric mining cars." Sverdlovsk, 1960. 18 pp; (Ministry of Higher and Secondary Specialist Education RSFSR, Leningrad Electrical Engineering Inst im V. I. Ul'yanov (Lenina)); 200 copies; price not given; (KL, 51-60, 118)

LEONT'YEV, F.S., inzh.

Defining the components of power consumption by the motors of electric mine locomotives. Izv. vys. ucheb. zav.; gor. zhur. no.10: 115-122 '60. (MIRA 13:11)

1. Leningradskiy ordena Lenina i ordena Trudovogo Krasnogo Znameni gornyy institut imeni G.V. Plekhanova. Rekomendovana kafedroy gornoy elektrotekhniki Leningradskogo gornogo instituta.
(Mine railroads--Electric driving)
(Electric locomotives--Testing)

LEONT'YEV, F.S., inzh.

Experimental testing of slippage of mine electric locomotive.
Izv. vys. ucheb. zav.; gor. zhur. no.2:119-124 '61. (MIRA 14:3)

1. Leningradskiy ordena Lenina i ordena Trudovogo Krasnogo Znameni gornyy institut imeni G.V. Plekhanova. Rekomendovana kafedroy rudnichnogo transporta Leningradskogo gornogo instituta.
(Mine railroads)

LEONT'YEV, Fedor Stepanovich; BELEV, Ye.I., red.; CHERNYKH, M.P., mlad. red.; ARDANOVA, N.P., tekhn. red.

[Under the sun of the North] Pod solntsem Severa. Moskva, Geografgiz, 1962. 229 p. (MIRA 15:7)
(Chukchi Peninsula--Natural history)

LEONT'YEV, F.S., inzh.

Experimental determination of a train's resistance to movement in haulage by electric locomotives in shale mines. Izv. vys. ucheb. zav.; gor. zhur. 5 no.1:117-120 '62. (MIRA 15:4)

1. Leningradskiy ordenov Lenina i Trudovogo Krasnogo Znameni gornyy institut imeni G.V.Plekhanova.

(Mine railroads)

LEONTIEV, F.S. [Leont'yev, F.S.]; PAULIK, J.

Determination of basic electromechanical parameters of mine trolley locomotives. Vysl ban vyzk 3:29-38 '64.

1. Elektrosila Plant, Leningrad (for Leontiev).
2. Institute of Mining, Slovak Academy of Sciences, Kosice (for Paulik).

KAMINSKIY, D.M., kand. tekhn. nauk; MYL'NIKOV, V.A., inzh.; ITSKOVICH, A.M., inzh.; BURLAK, S.T., inzh.; LEONT'YEV, F.Ye., inzh.

Use of semiconductor rectifiers in underground traction substations. Izv. vys. ucheb. zav.; gor. zhur. 6 no.8:180-182 '63. (MIRA 16:10)

1. Sibirskiy metallurgicheskiy institut (for Kaminskiy, Myl'nikov, Itskovich).

LEONT'YEV, G.A.

Slippage of crawler tractor tracks. Trakt. i sel'khozmash. 31 no. 5:16-18 My '61. (MIRA 14:5)

1. Stalingradskiy mekhanicheskiy institut.
(Crawler tractors)

Leont'yev, G.A.

AUTHORS: Zlotin, G.N., and Leont'yev, G.A. 113-58-3-8/16

TITLE: Apparatus for Continuous Registration of Fuel Consumption
(Pribor dlya nepreryvnoy registratsii raskhoda topliva)

PERIODICAL: Avtomobil'naya Promyshlennost', 1958, Nr 3, pp 27-28 (USSR)

ABSTRACT: At the present time there is no method or apparatus to register continuously fuel consumption. This fact makes the study of engine properties during operation very difficult. Such an apparatus is described. It consists of a capacitive transducer (Figure 1) and a device transforming the capacity changes during fuel consumption into corresponding changes of current. The transducer is a glass cylinder covered on the outside with tin foil and a copper rod in the inside. It works as a capacitor. When fuel is consumed, the fuel level in the transducer changes. The different dielectric properties of the fuel and air change the capacity of the transducer. A circuit diagram is represented in Figure 2. The system works without stabilizing devices. The general view of the apparatus is shown in Figure 4. The fuel consumption is registered on an oscillogram.
There are 4 figures.

AVAILABLE: Library of Congress

Card 1/1 1. Fuels-Performance-Measurement 2. Fuels-Testing equipment

YEVSTYUKHIN, A.I.; YEMEL'YANOV, V.S.; LEONT'YEV, G.A.

Investigating the process of electrolytic preparation of thorium.
Met.i metalloved.chist.met. no.1:7-35 '59. (MIRA 12:10)
(Electroforming) (Thorium)

YEVSTYUKHIN, A.I.; LEONT'YEV, G.A.

Design of electrolytic cells with self-reducing cathodes for the electrolysis of fused throium salts. Met.i metalloved.chist. met. no.1:36-43 '59. (MIRA 12:10)

(Electroforming--Equipment and supplies)
(Thorium)

LEONT'YEV, G.A.

Investigating the process of preparing plastic molybdenum by the method of thermal dissociation of its pentachloride. Met.i metalloved.chist.met. no.1:70-77 '59. (MIRA 12:10)
(Molybdenum) (Chemistry, Metallurgic)

YEVSTYUKHIN, A.I.; LEONT'YEV, G.A.; NIKISHANOV, V.V.

Arc melting in laboratories of metals and alloys having a high melting point. Met.i metalloved.chist.met. no.1:106-121 '59. (MIRA 12:10)

(Electrometallurgy) (Crucibles)

YEVSTYUKHIN, A. I.; LEONT'YEV, G.A.; BORKOV, N.V.

Design and performance of MIFI-9-2 high temperature furnaces with graphite heaters for melting and casting in the vacuum of pure metals and alloys. Met.i metalloved.chist.met. no.1:122-127 '59. (MIRA 12:10)

(Vacuum metallurgy—Equipment and supplies)

LeonT'yev, G.A.

21 (0), 24 (0)

AUTHOR: Tyagunov, G. A. SOV/89-7-2-18/24

TITLE: Scientific Conference of the MIFI (Nauchnaya konferentsiya MIFI)

PERIODICAL: Atomnaya energiya, 1959, Vol 7, Nr 2, pp 176-177 (USSR)

ABSTRACT: The yearly scientific meeting was held from 17 April to 15 May 1959 in the Moskovskiy inzhenerno-fizicheskiy institut (Moscow Physical Engineering Institute). More than 600 participants from 100 different institutes attended the 2 plenary and 18 sectional conferences. A total of 148 lectures were held. The following lectures are specially mentioned: M. K. Romanovskiy on the thermo-nuclear examinations, N. G. Basov on the physical foundations of molecular generators and amplifiers, A. I. Leypunskiy on the construction of a fast reactor, I. Ya. Pomeranchuk on the theory of the peripheral collision of mesons and nucleons, A. B. Migdal on superfluidity and momentum of inertia of the nuclei, A. S. Kompaneyets on the strong electromagnetic gravity wave, V. I. Gol'danskiy on levels which are excited within the nucleus shell and methods of comprehending them, I. I. Rozental' and L. A. Prokhorova on the analysis of the possible experiments for the determination of the measurements of the μ-mesons, [illegible] on the spectrum of liquid and crystalline hydrogen under pressure (8000-10000 atm) and an instrument for measuring the absorption curves, [illegible] Lyapidevskiy and O. V. Simakina on new application possibilities of the diffusion chamber, A. V. [illegible] on calculation methods for linear electron accelerators with migratory waves, P. A. Ryazin, A. D. Vinogradin and A. I. Naboyev on new theories of the electron capture under betatron conditions of the acceleration, Ya. B. Fraynov on optimum wave length for a generator, S. P. Lomnev and G. A. Tyagunov on magnetic focusing in a linear electron accelerator, O. A. Val'dner, [illegible], [illegible] Zoria, Yu. [illegible] Klein on the 3 new linear accelerators of the MIFI, and V. V. Kuznetskiy, O. A. Val'dner, V. V. [illegible] and [illegible] Chesnokov on examination of the electron movement in the system of the elutron with consideration of the scattering fields, O. A. Krayev on impulse method for measuring the heat conduction capacity of liquids and the theory of this method, Ya. [illegible] Khabakhpashev, [illegible] Il'in and [illegible] on heat transmission to the eutectic Na-K which flows in a circular space, [illegible] Petrovichev on heat transmission to circulating mercury, [illegible] Roysli on special conditions when working with a flat triode in the impulse technique, G. S. Pofuryev on calculation methods and construction of an impulse transformer for instruments with semi-conductor elements, Ya. A. [illegible] on a possibility judge the characteristics of magnetic recording of impulses, B. I. Kal'nin on the element system for a universal digital computer, V. S. [illegible] on multiple control of the parameters of technologic processes, P. I. Popov on analysis of several systems with which physical energy apparatus can be automatically started, [illegible] on a method to examine the quality of a reactor control when the reactivity changes stepwise or linearily, G. A. Leont'yev and A. I. Yevstyukhin on examination of the iodine method of refining niobium and characteristics of the metal obtained, P. L. Gruzin and G. G. Ryabova on examination of the micro-distribution of carbon, tungsten, iron and other elements in zirconium and its alloys by use of auto-radiography, G. B. Fedorov on determination of the sublimation heat of zirconium and nickel by using radioactive indicators and G. B. Fedorov and [illegible] on determination of the diffusion coefficients of chromium, nickel, iron and chromium nickel steels. The literature for all these lectures will be published by the MIFI in a symposium.

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YEMEL'YANOV, V.S.; YEVSTYUKHIN, A.I.; LEONT'YEV, G.A.

Niobium iodide and some of its properties. Met. i metalloved. chist. met. no. 2:27-48 '60. (MIRA 13:12)
(Niobium iodide)

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S/137/61/000/010/015/056
A006/A101

**AUTHORS:** Yevstyukhin, A.I., Yemel'yanov, V.S., Leont'yev, G.A.

**TITLE:** Investigating the process of electrolytic preparation of thorium

**PERIODICAL:** Referativnyy zhurnal. Metallurgiya, no. 10, 1961, 31, abstract 10G247 (V sb. "Metallurgiya i metalloved. chist. metallov", no. 1, Moscow, 1959, 7 - 35)

**TEXT:** The authors investigated experimentally the process of electrolytical preparation of Th from a molten mixture of Na and K chlorides and Th fluoride. It was established that during the electrolysis continuous changes in the electrolyte composition take place due to the prevailing deposition of $Cl_2$ on the anode and the accumulation of F in it in the form of NaF and KF; the latter bind entirely to a complex the plain Th fluoride charged into the bath. During extended electrolysis, a maximum Th yield on the cathode is only obtained when its concentration in the electrolyte is $>$ 40 - 43 weight %. Optimum conditions of electrolysis were found and the effect on the current efficiency and the metal yield of the most important technological factors was studied. These factors are: the mechanical compression of cathode deposits, Th concentration in the

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Investigating the process ...

electrolyte, the multiplicity of the electrolyte exchange in the bath, $D_c$ and the volumetric concentration of the current, and the temperature of the electrolyte. Under optimum conditions of electrolysis, a coarse-grained crystal powder of Th is obtained with high metal yield (70 - 75%) and 50 - 56% current efficiency. The content of rare-earth element admixtures decreases by a factor of 60 - 80 as compared with their content in the initial Th fluoride. There are 58 references.

G. Svodtseva

[Abstracter's note: Complete translation]

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[redacted]

S/081/61/000/021/045/094
B150/B101

AUTHORS: Yevstyukhin, A. I., Yemel'yanov, V. S., Leont'yev, G. A.

TITLE: Investigation of the process of obtaining thorium by electrolysis

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 21, 1961, 296 - 297, abstract 21K158 (Sb. "Metallurgiya i. metalloved. chist. metallov." M., no. I, 1959, 7 - 35)

TEXT: By the electrolysis of the melt NaCl + KCl + $ThF_4$ it is possible to obtain high-purity thorium and to reduce the content of impurities of the rare-earth elements by 60 to 80 times in comparison with the content in the original $ThF_4$. By electrolyzing the melts with a solid cathode the crystals of the deposit are less contaminated by impurities than a deposit on a liquid cathode. The crystals are bigger than the crystals of the metal obtained by chemical methods. However, the deposit is never dense, which is connected with the considerable loss of the electrolyte included in the cathodic deposit. Consequently, the experiments were conducted in

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a bath with an auto-compressing cathodic deposit, allowing considerable reduction of the content of the electrolyte in the deposit. At the beginning of the electrolysis, the melt contained (in % by weight): Th 12.5, Na 16.1, K 22.6, Cl. 44.7, F 3.8. The change in the composition of the electrolyte in the electrolysis was studied by chemical, thermal, and X-ray methods. As the electrolysis proceeds there is a continuous variation of composition of the electrolyte - an accumulation of fluorine in the form of NaF and KF. The $ThF_4$ added forms complexes of the type $NaKThF_6$, $Na[ThF_5]$, $Na_2ThF_6$, $K[ThF_5]$, $K_2[ThF_6]$. With the usual construction of cathode the deposit contains up to 75% of electrolyte. The metal yield is 30%. With auto-compressing cathodes the content of electrolyte falls to 50% and the metal yield increases to 75%. At a high content of Th in the electrolyte, the current yield increases, but at the same time the losses of Th increase owing to the removal of the electrolyte. The optimum concentration of Th in the electrolyte is 40 - 43 % by weight. With this, the current yield is 50 - 56%, and the content of coarsely disperse powder of Th is 2 - 2.3 times greater than the content of the "sludges" (finely disperse powder). The optimum volume concentration of current is 50 - 70 a per kg of electrolyte ($D_c$ = 3 - 4 a/cm$^2$). At 680 to 700°C, the yield of metal reaches its maximum; with an increase of temperature the content of the finely disperse fraction increases. The reduction of $D_c$ has a similar effect. Thermodynamic calculations show that the discharge of $Na^+$ or $K^+$ ions with subsequent reduction of thorium fluoride by the alkali metal is the initial process in the electrolysis of the KCl + NaCl + $ThF_4$ melt. $ThF_4 + 4NaCl(KCl) \rightarrow Th + 4NaF\text{-}(KF) + 2Cl_2$. In proportion with the accumulation of fluorides of the alkali metals Th is bound in the complex, and for its deposition on the cathode a considerable increase is necessary in the concentration of Th in the electrolyte, up to 42 - 43 % by weight. The anodic process with an increase of fluorine content consists in the formation of $CF_4$: $NaK[ThF_6] + C \rightarrow Th + NaF + KF + CF_4$. Mean composition of the electrolytic Th (in % by weight): Th 99.5, Fe 0.005, rare earths 0.0006, Na 0.01, K 0.01, F 0.2, N 0.01, C 0.025, O 0.22. [Abstracter's note: Complete translation.]

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S/081/61/000/021/044/094
B150/B101

AUTHORS: Yevstyukhin, A. I., Leont'yev, G. A.

TITLE: The construction of an electrolyzer with auto-compressing cathodes for the electrolysis of fused thorium salts

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 21, 1961, 296, abstract 21K157 (Sb. "Metallurgiya i metalloved. chist. metallov", M., no. I., 1959, 36 - 43)

TEXT: When depositing metal on a cathode in the form of loosely adhering crystals, as, for example, when obtaining rare and refractory metals by the electrolysis of fusions, it is convenient to produce the condensation of the cathodic deposit without interrupting the process. The construction described permits the uninterrupted or periodic condensation of the loose cathodic deposit. A drawing and a photograph of the apparatus with 300 a are shown. Automatic compression of the deposit is effected by compression of the auxiliary cathode to the principal cathode. The cathodes are turned in opposite directions. The intensity of compression does not vary with increasing thickness of the deposit on the principal cathode. The apparatus was tested on a fusion of KCl + NaCl + $ThF_4$ with external heating of the

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